

Introduction

San Luis Obispo County has many significant biological features. These include several distinct vegetation and wildlife habitat communities, plant and animal species of rare and/or endangered status, depleted or declining species, and species or habitat types of limited distribution, such as wetlands. Human activity has had major adverse effects on the health and sustainability of the County's natural communities. Since the mid-19th century, grazing, logging, agriculture, road building, and development have markedly altered the natural landscape.

This appendix identifies biological resources of importance in San Luis Obispo County and outlines the existing federal and state regulatory framework pertaining to biological resources. While this section identifies these resources individually, it is important that they also be recognized as a whole ecosystem, with several subsystems. A healthy system is diverse, unstressed and contains enough redundancy to withstand changes brought naturally or by development.

Ecosystems¹

Ecosystems hold the key for preserving vegetation and wildlife. In fact, we cannot truly protect endangered species unless we preserve the ecosystem that they depend on and interact with. Accordingly, the wisest and most efficient strategy for preserving rare or endangered species - and in the long run the least costly - is to prevent them from becoming rare and endangered in the first place.

An ecosystem can be defined as all the components of a biological community and the physical environment, and the interactions among and between them. Ecosystems are more than just the sum of their various components, involving a complex system of linkages between plants, animals, their environment, and humans.

The key to protecting biological resources and sustaining the great variety of lifeforms on earth is to protect and sustain healthy, functioning ecosystems and the biological diversity within them. "Biodiversity" refers to all living organisms and the ecological setting on which they depend for life; the natural variety, abundance and variability of different plant and animal species. One of the generally accepted key principles of ecology is that biological diversity leads to stability of an ecosystem.

The connectivity between species in a natural community is demonstrated when one looks at the food web, as shown in **Figure A3-1**. If one of the key links in the system is broken - a certain keystone species is lost, for example - the functioning of the entire ecosystem upon which many plants and animals depend can be weakened and the natural communities lost. Extinction of a

¹ This section is excerpted directly from the Open Space Element (San Luis Obispo County 1998).

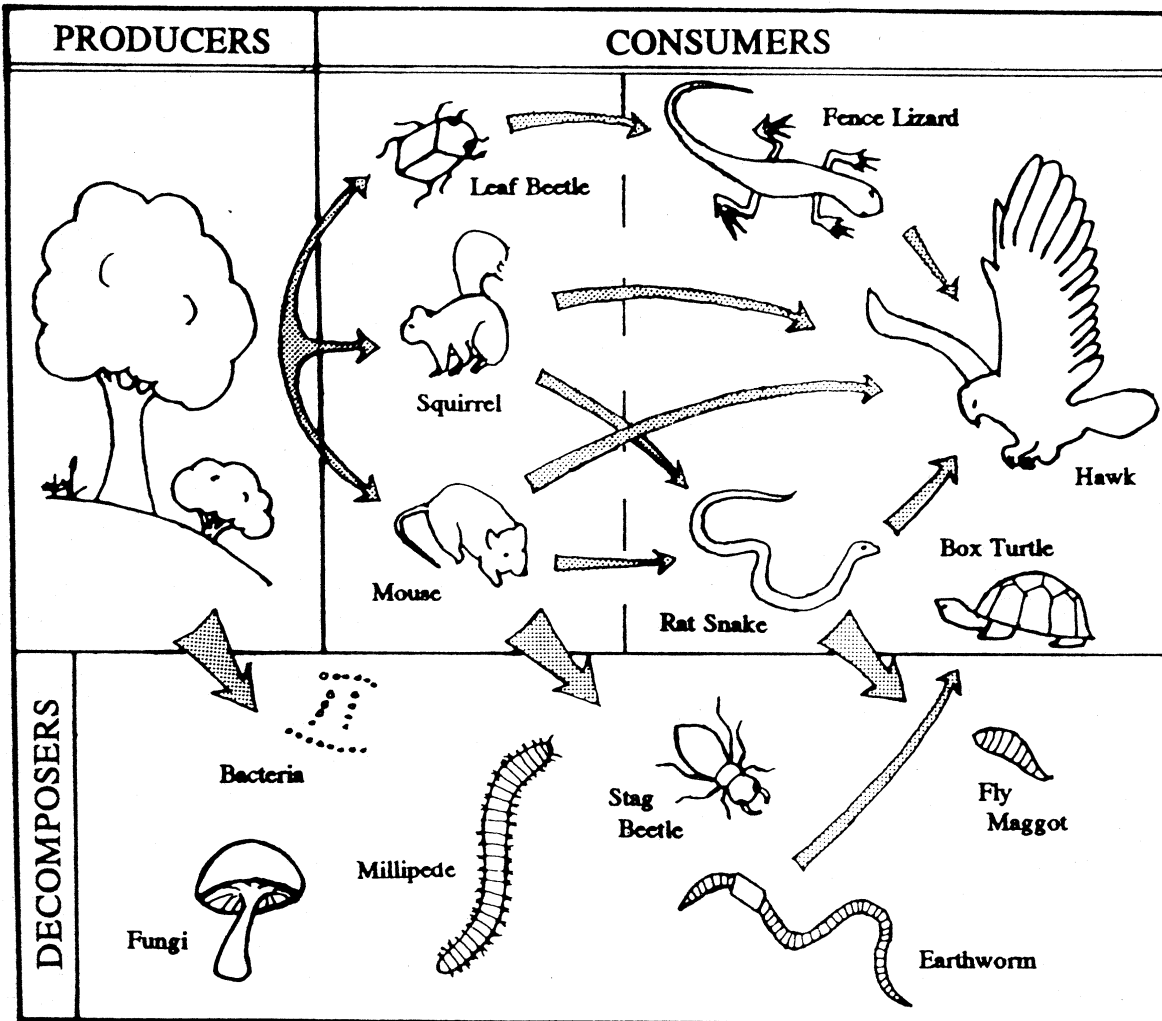
key plant or animal - predator or prey - can be the beginning of the end for an ecosystem. The key to avoiding this is to maintain the complex system of linkages in the ecosystem wherever possible. This can be done by maintaining large, unfragmented areas of natural habitat and by maintaining physical connections between those areas to enable wildlife migration - preserving biological diversity.

This Conservation and Open Space Element is an important step towards conservation planning in San Luis Obispo County. If planning programs can be more effective on an ecosystem basis, the programs will be more effective at protecting those species already listed as rare and endangered. More effective programs could also reduce the number of new species added to the rare and endangered lists.

It is often argued that there is not the technical information on which to base broad conservation plans. However, it is important to keep in mind that there may never be all the information needed. Waiting until all the information is available will mean no action, possibly resulting in the loss of many species and options. Also, it is less costly in both economic and ecological terms to conserve a healthy ecosystem than to recreate natural resources that have been lost. Therefore, efforts towards conservation planning should move forward, with each plan considered an experiment to be monitored and evaluated for appropriate changes as more data become available over time.

The most effective strategy would be to sustain entire natural ecosystems. This approach is complicated by the fact that ecosystems often span many types of land uses and ownership patterns, and do not respect political boundaries. They often cross the jurisdictions of cities, counties, government lands, and states. By waiting until species are endangered before taking steps to protect them, the task becomes difficult, costly and usually controversial. The focus should shift from trying to protect individual species once they become endangered (although that is still important) to protecting entire ecosystems before that happens. Since ecosystems exist on such a large scale, their protection must involve new and innovative measures that go beyond traditional land use regulations.

FIGURE A3-1 THE CONNECTIVITY BETWEEN MEMBERS OF THE ECOSYSTEM CAN BE SEEN IN THE FOOD WEB.



Source: Peck, Sheila, Landscape Conservation Planning: Preserving Ecosystems in Open Space Networks; Integrated Hardwood Range Management Program, U.C. Cooperative Extension, 1993.

A network of Major Ecosystems should be established in areas that have minimal disturbance and high biological diversity, with the minimum size and the boundaries of the system based on accepted principles of ecology and wildlife management. The core of the Major Ecosystems network should be existing public lands, such as those controlled by the Bureau of Land Management and the U.S. Forest Service. County Natural Area Preserves also have excellent potential to serve as the cores of Major Ecosystems.

In order to be as viable as possible, Major Ecosystems should be comprised of large, contiguous areas rather than several smaller, isolated, fragmented islands of habitat. The

ecosystem must be large enough to allow for the migration of wildlife and to sustain the diversity of wildlife populations. There should be large open space areas that can be connected by landscape corridors to enable species and ecological processes to move from one area to another. The objective of the spatial design of the Major Ecosystem should be to create a system that will maximize the identified ecological values and minimize the negative impacts to and from surrounding lands.

As a network of Major Ecosystems is created, a variety of spatial design parameters need to be considered. Careful attention should be given to maintaining overall landscape connectivity, with particular attention given to retaining adequate areas of interior habitat. Where possible, habitat areas should be linked by corridors of similar habitat to enable species movement.

WILDLIFE CORRIDORS²

Habitat corridors will also be critical to the continued success of the ecosystem. If the corridor is going to function for the benefit of the plants and animals, the habitat within the corridor should consist of native vegetation that has been part of the historical landscape, and it must be similar to the habitat found in the patches being connected by the corridors. In contrast, small, isolated areas of habitat are not conducive to sustaining wildlife population over the long term. If the habitat patches become even more dispersed on the landscape, each patch will become an "island." Over time, the number of different species and the numbers of individual animals will decline in these habitat islands due to inbreeding and competition for food and habitat.

Wildlife corridors between habitat areas are a way to minimize the island effect. Good examples of wildlife corridors are streams and riparian corridors. Wildlife corridors can also be recreated and protected by humans. The protection of corridors could be required in certain circumstances in order to minimize the effects of public and private construction projects on wildlife migration.

The island effect also occurs when habitat areas are surrounded by development. Animals that leave the habitat, or are exposed to more impacts because of the larger edge, are more likely to permanently leave the area. If they stay, they are more likely to be killed by such hazards as household pets, pesticides and other human impacts, or succumb to a habitat that cannot provide the necessary life support factors. Without contiguous areas of natural habitat, the animal populations are not replenished from adjacent areas of habitat like they are in larger undeveloped areas, where animals can move freely from one area to another. Therefore, over time, the numbers and diversity of wildlife will decline.

² This section is excerpted directly from the Open Space Element (San Luis Obispo County 1998).

UNIQUE OR SENSITIVE PLANT AND ANIMAL HABITATS³

Sustaining a healthy ecosystem where biological diversity is maintained is essential to the survival of unique or sensitive vegetation and wildlife. Unique plant or animal habitat includes the following: habitat of rare, endangered or threatened plant or animal species as classified by state and federal agencies and the California Native Plant Society (CNPS); wetlands and marshes; areas subject to Sensitive Resource Area combining designations in the LUE applied because of unique or sensitive species; and sensitive natural communities as identified in the California Department of Fish and Game Natural Diversity Data Base (such as Valley Oak Woodland, California Bay forest, Central maritime Chaparral, and Pine Bluegrass Grassland). Protection of sensitive natural communities is important because they often contain groups of rare, threatened or endangered species (also see the prior discussion of Ecosystems).

Protecting unique or sensitive plant and animal habitat is also beneficial because it provides:

- A high aesthetic and environmental quality that also contributes to the attractiveness of this county for visitors and the tourism industry they support;
- Opportunities for people to experience and appreciate the natural environment;
- Opportunities for education and scientific research, including the discovery of new medicines and ways to increase agricultural productivity.

Wetland habitats⁴

Conserving valuable but rapidly diminishing wetland habitats also provides the benefits of filtering pollution, protecting water quality, controlling flooding, and maintaining a high water table. The importance of wetlands has been long recognized in the county general plan. Wetlands are also recognized at the state and federal levels as area worthy of special consideration. Unfortunately, there is no inventory of the wetland resources in the county, so the identification and protection of these resources most often occurs when a development proposal is submitted on property that may include a wetland. The project review must then try to minimize or eliminate the potential impacts from the proposed development.

Public and private development must help carry out the important objective of maintaining and protecting the unique and sensitive habitats. This plan proposes strategies that would enable development in isolated areas of unique or sensitive vegetation and wildlife as a trade-off to the preservation of larger, more significant areas. By doing so, development can be beneficial to the preservation of important habitats which have been degraded.

³ This section is excerpted directly from the Open Space Element (San Luis Obispo County 1998).

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Streams and Riparian Corridors

Streams and their associated riparian vegetation corridor are important open space resources. Maintaining streams and riparian corridors in a natural state offer many benefits, including:

- Conserving important habitat for wildlife such as fish spawning areas and key corridors for wildlife migration and survival, thereby contributing to the overall health of the ecosystems;
- Maintaining the productivity of estuaries downstream;
- Providing ground water recharge;
- Maintaining high aesthetic quality;
- Providing potential recreational opportunities where identified by this or other plans.

Maintaining adequate setbacks between development and streams and the riparian corridor provides the following benefits:

- Provides a needed buffer area to protect natural habitat from direct impacts of development;
- Reduces erosion and sedimentation of the stream;
- Maintains natural channels to carry storm water flow (see Figure 3-10) while reducing the possibility of flooding without the need for costly, unsightly and environmentally damaging stream channelization.

As noted in the previous discussion of ecosystems, wildlife corridors for species movements are critical to the survival of the ecosystem. One of the most important types of corridors is along streams. Waterways not only provide the water on which species depend for life, the riparian vegetation also provide the habitat cover needed to provide for security of movement, possible food sources, and breeding and nesting areas.

The ecological processes operating within a landscape are strongly influenced by the hydrology of the area. If the natural flows of waterways are interrupted, the effects on the ecosystem can be very damaging because the plants and animals are limited in their ability to adapt to changing conditions. Therefore, maintaining or, where necessary, restoring hydrologic patterns is vital for protection of the ecological processes that support species.

SENSITIVE SPECIES AND IMPORTANT BIOLOGICAL RESOURCE AREAS

Sensitive resources include jurisdictional wetlands, occurrences of special-status species, occurrences of sensitive natural communities, wildlife nurseries and nesting areas, and wildlife movement corridors.

Several sensitive habitats types, plant taxa, and animal taxa have been recently or historically known to occur in the County. The California Natural Diversity Data Base (CNDDB) is a computerized inventory of California's sensitive plants, animals, and natural plant communities. The term "sensitive species" is used throughout this section and includes plants and animals that are officially listed by a regulatory organization or agency as well as those considered to be of local concern or interest by recognized monitoring agencies such as California Native Plant Society (CNPS), CDFG or Audubon Society.

Fieldwork was not conducted as part of this analysis to confirm or deny the presence of these or other sensitive species. Specific studies, including those conducted by the United States Fish and Wildlife Service (USFWS, 1997), CMCA (2000, 2002), and mapping conducted by Jones & Stokes (1997) and CMCA (2002) have verified the presence of some sensitive species. It is important to note that additional, previously unidentified species or habitats could also occur within the County. Site specific surveys for any potentially sensitive species would be necessary to confirm their presence within a particular area proposed for development. The following discussion is intended to provide a general understanding of sensitive species in San Luis Obispo County.

NATURAL COMMUNITIES

San Luis Obispo County is home to a number of diverse and important natural communities, from coastal marine environments to riparian habitats, and a mosaic of forests, woodlands, grasslands, and chaparral.

San Luis Obispo County supports a variety of natural communities, some of which are considered rare or sensitive by the regulatory agencies. The term "natural community" is generally intended to refer to plant and wildlife associates in specific habitat types. **Table A3-2** lists each natural community that has the potential or is known to occur in each planning area within the County. Natural Communities classified as "rare" are habitats that are either known or believed to be of high priority by the California Department of Fish and Game. The assessment of plant communities occurring within the County was based on review of the literature, previous EIRs in the County. Important types of habitat in the County that take on a regional character include:

TABLE A3-2 NATURAL COMMUNITIES/HABITAT TYPES AND POTENTIAL/KNOWN OCCURRENCES WITHIN SAN LUIS OBISPO COUNTY PLANNING AREAS

Natural Communities/ Habitat Types	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Agricultural Land ²
Alvord Oak Woodland	.						.						.		
Beaches and Coastal Dunes ²			
Big Sagebrush Scrub													.		
Black Oak Forest	.												.		
Blue Brush Chaparral											.				
Blue Oak Woodlands
Buck Brush Chaparral
Ceanothus megacarpus Chaparral												.			
Central (Lucian) Coastal Scrub		
Central Coast Arroyo Willow Riparian			.												
Central Coast Cottonwood-Sycamore Riparian						
Central Coast Live Oak Riparian Forest							.	.							
Central Dune Scrub ¹			.											.	
Chamise Chaparral		
Central Foredunes ¹														.	
Central Maritime Chaparral ¹						
Coast Live Oak Forest
Coast Live Oak Woodlands

Natural Communities/ Habitat Types	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Coast Range Ponderosa Pine Forest							•	•							
Coastal and Valley Freshwater Marsh ¹			•									•		•	
Coastal Brackish Marsh ¹			•												
Coulter Pine Forest	•					•	•						•		
Diablan Sage Scrub		•		•	•	•			•			•	•		•
Dry Salt Flat ²													•		
Dryland Grain Crops ²													•		
Foothill Pine-Oak Woodlands	•	•		•	•	•	•	•	•				•		
Great Valley Cottonwood Riparian Forest													•		
Interior Coast Range Saltbrush Scrub													•		
Juniper-Oak Cismontane Woodland													•		
Leather Oak Chaparral							•		•			•			
Mixed Evergreen Forest	•					•	•	•	•			•			
Mixed Serpentine Chaparral	•						•	•	•		•	•			
Mojavean Pinyon and Juniper Woodlands													•		
Monterey Pine Forest ¹								•							
Mule Fat Scrub				•										•	•
Non-Native Grassland	•	•		•	•	•	•	•	•	•	•	•	•		•
Northern Coastal Salt Marsh ¹			•												
Northern Claypan Vernal Pool ¹													•		
Northern Interior Cypress Forest ¹									•						
Open Foothill Pine Forest	•	•			•	•	•						•		
Orchard or Vineyard ²	•	•							•				•		

Natural Communities/ Habitat Types	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Permanently-flooded Lacustrine Habitat	•		•	•	•		•					•			
Red Shank Chaparral	•														
Sandy Area Other than Beaches ²		•							•					•	
Semi-Desert Chaparral				•		•							•		
Serpentine Bunchgrass ¹												•			
Serpentine Foothill Pine-Chaparral Woodlands									•						
Upper Sonoran Subshrub Scrub													•		
Urban or Built-up Land ²	•	•	•					•	•	•	•	•	•		•
Valley Needlegrass Grassland ¹			•												
Valley Oak Woodland ¹	•				•				•						
Valley Saltbush Scrub													•		
Valley Sink Scrub ¹													•		
Venturan Coastal Sage Scrub	•		•	•		•						•	•		•

Source: San Luis Obispo County Affordable Housing Ordinance EIR, 2007
(CNDDDB database queried on December 11, 2006)

Notes: ¹ CNDDDB Communities

² Habitat Type Provided by the County and not included in Holland 1986

The Nipomo Dunes. This national natural landmark located south of Point Buchon is host to a large number of endemic and rare plant species, as well as dune uplands lakes and wetlands.

Estuaries. Estuaries are a notable feature of the coastal areas, occurring wherever flowing streams meet the ocean. They are the nursery for the local fisheries along the coastline. Morro Bay contains the region's largest estuary, with a saltwater marsh located on the east side where Chorro and Los Osos creeks enter the bay. This is one of the most significant wetlands remaining on the California coast, providing nesting habitat for blue herons, cranes and other important species of woodland birds and wildlife. Morro Bay estuary is also a designated state and national estuary. Smaller coastal lagoons and marshes are also scattered along the shoreline.

The Upper Salinas River Valley. This area is characterized by a variety of vegetation communities including riparian, oak woodlands, wetlands, native and non-native grasslands, and chaparral. Coast Live Oak and Blue Oak are dominant features of the landscape, with a variety of wildlife supported by the oak woodlands scattered throughout the area. Riparian trees such as sycamores, cottonwoods and willows are common along drainage channels, streams, reservoirs, and marshes. Grassland vegetation is widespread on the rolling hills and flat areas that are either too dry to support oak woodland or have been cleared of oaks in the past.

The Carrizo Plain. This basin in the east county is a dry salt lake with alkali flats and saltbush-scrub as the principal vegetation. The upland areas are characteristic of an arid prairie, with little vegetation except dry grass. This region is best described as a steppe - a dry grass-covered area with wide temperature fluctuations.

Coastal Streams. Coastal streams (perennial and intermittent) are environmentally sensitive habitat areas. Several coastal streams may support steelhead trout during periods of sufficient flow. Steelhead trout are anadromous rainbow trout that return to spawn in freshwater streams during the spring. This species is an important fishery resource along the entire west coast and has recently been listed as “threatened” by the National Marine Fisheries Service. The biggest threat to this species is due to damming of coastal streams, however, they are also threatened by low instream flows resulting from water diversion and groundwater pumping, and water quality degradation due to erosion.

HABITAT TYPE ⁵

In the early 1980's, the California Wildlife-Habitat Relationships (WHR) System was developed as a standardized methodology for identifying and assessing wildlife and habitat relationships. In 1988, the state published "A Guide to Wildlife Habitats of California" (Kenneth E. Mayer and Wm. F. Landenslayer, editors), which contains a detailed description of the 19 different types of wildlife habitats that constitute the WHR classification system. The following is a brief description of the various habitat types found in San Luis Obispo County.

Oak Woodlands. Oak Woodlands are a major component of SLO County's rural landscape and the highest priority vegetation in the county. According to the Oak Woodland Voluntary Management Plan, oak woodlands covered more than 36 percent of the total land area of the county in 1994 which put the County in the State's "Top Ten" both in total oak woodland acreage and in proportion of county lands that are oak woodlands. This habitat type is a major component of the rural landscape of the county. Throughout California, oak woodlands in general are considered sensitive habitat primarily due to their limited acreage, high wildlife value, gradual loss as a result of development, and lack of regeneration. Over time, oak dominated woodlands have been degraded by urban and rural residential development, livestock, and the expansion of agriculture. In most areas, the understory cover is either lacking or is composed primarily of non-native species. Oak woodlands in San Luis Obispo County have experienced many of the same impacts over the years.

The following is a description of the various types of oak woodlands.

Valley Oak Woodland. This habitat occurs in a wide range of settings, but is best developed on deep, well drained alluvial soils usually in valley bottoms, and on non-alluvial soils in the coast ranges. Valley oak woodland varies from savanna-like to forest-like stands with partially closed canopies, with a grassy understory. Individual trees may reach 115 feet in height. Valley oak woodland intermixes with valley oak riparian forest near rivers and with blue oak woodland in drier locations. These woodlands provide important food and cover for many species of wildlife.

Blue Oak Woodland. Blue oak woodlands are usually associated with shallow, rocky, infertile, well-drained soils. Blue oaks are well adapted to dry, hilly terrain where the water table is usually unavailable. Blue oak woodland intergrades with valley oak woodland, but generally occurs on drier slopes. This habitat varies in structure from open savanna to dense woodland

⁵ This section is excerpted from the following County documents: Open Space Element (San Luis Obispo County 1998) and the Estero Area Plan Final Impact Report (San Luis Obispo County 2003), and the San Luis Obispo County Affordable Housing Ordinance Final Environmental Impact Report (San Luis Obispo 2007).

and is typically found in the valleys and foothills of the coast ranges. Typical understory is composed of an extension of Annual Grassland vegetation.

Blue Oak-Grey Pine. This habitat is typically diverse, with a mix of hardwoods, conifer, and shrubs. Associated species are the coast live oak and valley oak. Soils are generally well drained materials, ranging from gravelly loam through stony clay loam, and are typically rich in rock fragments. Most mature stands of this type have a canopy closure that can range up to 59 percent, and generally have small accumulations of dead and downed woody material and relatively few snags compared to other tree habitats. Concern has been expressed for the long-term existence of this habitat because there has been little regeneration since the late 1800's due to the seedlings and yearly acorn crop being eaten by livestock, deer, birds, insects and rodents.

Coastal Oak Woodlands. These woodlands are extremely variable. They are known to exist on over 15 different types of soils in the county, generally occurring on moderately to well drained soils that are moderately deep and have low to medium fertility. The overstory consists of deciduous and evergreen hardwoods, mostly oaks, up to 70 feet in height. The understory can vary from shrubs that are dense and almost impenetrable, to more scattered under and between trees, to grasslands where the trees are scattered to form an open woodland. Most coastal oak woodlands are comprised of medium to large trees with few seedlings and saplings, especially in heavily grazed areas.

These woodlands are comprised of slow growing, long-lived trees, so succession requires a long time. Regeneration of most oaks in coastal oak woodlands have not been thoroughly studied, but they are generally thought to not have the serious regeneration problems found in blue oak and valley oak. Coastal oak woodlands provide habitat for a large variety of wildlife species, up to as many as 110 species of birds observed during the breeding season in California habitats where oaks form a significant part of the canopy or subcanopy. The continuing loss of coastal oak woodland habitat is a significant concern.

Montane Hardwood. A typical montane hardwood habitat is composed of a pronounced hardwood tree layer, with poorly developed shrub and herbaceous layers. On better sites the trees may be only three feet apart, while on poorer sites the spacing may be as much as over 30 feet, with individual tree heights ranging from 50 to nearly 100 feet. Canyon live oak often form pure stands on steep canyon slopes and rocky ridgetops, but can be found on a wide range of slopes ranging from moderate to steep. Soils are for the most part rocky, alluvial, coarse textured, poorly developed and well drained. This habitat is characterized by bird and animal species that include both disseminators of acorns, as well as species that depend on acorns as a food source.

Conifer. True coniferous forest is rare in San Luis Obispo County. These evergreens are irregular in location and are usually rather small in area. However, there are several stands that can be considered true coniferous forest, including the Cambria Pine forest on the North Coast, Ponderosa Pines on Pine Mountain above San Simeon, Bishop Pines south of Coon Creek in the San Luis Range, Knobcone Pine mixed to a limited extent with Coulter Pine southeast of Cuesta Pass, and some Sargent Cypress with scattered Coulter Pines northwest of Cuesta Pass. Typically, the trees are closely spaced but may be more scattered when mixed with other species.

Shrub (chaparral). This habitat is characterized as mixed chaparral. Chaparral is a sort of catch-all that describes a wide variety of closely crowded shrubs with thick, stiff heavy evergreen leaves. The habitat extends throughout the county, from near the coastline to the La Panza Range on the eastern border of the county. Shrub height and crown cover can vary widely, depending on age since the last burn, rainfall, slope, orientation and soil types. Mixed chaparral can support a wide variety of woody plants, including scrub oak, chaparral oak, several species of ceanothus, manzanita, toyon and others. There are no wildlife species restricted to chaparral habitat.

Annual Grassland. The majority of grasslands throughout California are dominated by non-native grasses that were accidentally introduced from the Mediterranean region during the Spanish Colonization period. Grasslands in San Luis Obispo County are generally composed of introduced annual grasses. These introduced species occupy what was once pristine native grassland. However, small, scattered patches of native grasslands may still exist. Grasslands occur as understory plants in valley oak woodland and other habitats. This habitat provides important foraging, denning, and nesting opportunities for a variety of wildlife species.

Eucalyptus Woodland. Eucalyptus woodland is typically represented by dense stands of gum trees, commonly referred to as eucalyptus, that were originally imported primarily from Australia. The trees were originally planted in groves throughout many regions of coastal California as a potential source of lumber and building materials and for their use as windbreaks. They have increased their cover through natural regeneration, particularly in moist areas sheltered from strong coastal winds. Where the trees exist in dense stands, they tend to completely supplant native vegetation, greatly altering community structure and dynamics. Very few native plant species are compatible with eucalyptus.

Riparian Forest. Riparian forest lands can take one of two forms on the central coast. One is an open, low riparian forest dominated by coast live oak. This association occurs on drier, slightly elevated floodplains along perennial streams, and typically occupies a transitional zone between more moist cottonwood or willow-dominated communities and the more dry chaparral vegetation types.

A second type of riparian forest is the cottonwood-sycamore riparian forest. This is a habitat dominated by western sycamore, cottonwood, and valley oak. This association typically occupies course soils of the floodplains of low velocity streams. Cover is nearly complete and a dense thicket of shrubs may form in the understory. This habitat is found in canyons and creeks throughout the coastal area.

Coastal Saltmarsh. This is a wetland plant community comprised of salt tolerant species, reaching approximately three feet in height and forming moderate to dense cover. This association occupies sheltered inland margins of bays, lagoons, and estuaries subject to tidal inundation. Extensive areas of this habitat occur around Morro Bay.

Wetlands. Wetlands are considered important natural resources because the proper functioning of stream systems is a critical component of high-quality fish habitat. Woody vegetation provides shade that keeps water temperatures within tolerable ranges for fish and other aquatic organisms, stabilizes streambanks and floodplains, provides protective cover for wildlife, and contributes debris to stream channels for fish habitat structure. Herbaceous vegetation helps stabilize streambanks, and filters and traps sediments and pollutants.

Marine Intertidal. Marine intertidal communities consist of various aquatic plant species occurring in the nearshore marine environment. Aquatic plants within these communities are adapted to alternating exposure to air and inundation by seawater. Most marine aquatic vegetation is established on rocky substrate in areas influenced by marine tidal action. Rocky sea bottoms occupy a small portion of the entire coastline adjacent to the Estero planning area. Intertidal plant communities within these areas consist of a mixture of algae and marine angiosperms (flowering plants).

Estuarine. Estuarine communities occur where freshwater from streams mixes with water from the marine environment in a protected embayment. Estuarine communities are particularly abundant within Morro Bay. Large variations in salinity and water levels occur within the estuarine environment, primarily due to the indirect influence of the tides and seasonal changes in freshwater runoff from streams. Aquatic plants existing in the estuarine environment are generally inundated for prolonged periods, yielding plant species that are generally soft-bodied and somewhat flexible. Eelgrass (*Zostera marina*) is a common aquatic flowering plant species that occurs in estuarine environments and is adapted to constant inundation. This species is abundant within Morro Bay and is established on substrate consisting of deposited silt. Algal species, which occur as part of estuarine communities in the Estero planning area, include *Ulva* sp. and *Cladophora* sp.

Coastal Salt Marsh. Coastal Salt Marsh communities typically occur adjacent to the shallow waters occupied by the estuarine environment and function as an interface between marine and freshwater environments. These communities exhibit similar characteristics to those of estuarine

communities, however, plants occurring within the coastal salt marsh are adapted to the stresses of variation in salinity, periodic inundation and extreme fluctuations in temperature. In the Estero planning area, coastal salt marsh communities are extensive and occur at the mouths of small coastal streams such as Chorro and Osos Creeks.

Freshwater Marsh. Freshwater Marsh communities occur in slow moving, shallow freshwater streams and lakes and are typified by areas containing nutrient rich mineral soil consistently saturated throughout the growing season. These communities are often found inland and adjacent to coastal saltmarsh communities. These communities also occur in isolated areas where the water table is at or near the ground surface, and are often referred to as "freshwater seeps". Freshwater marsh communities occupy a very small portion of the total planning area, and vegetation occurring as part of these communities is adapted to harsh environmental conditions, including prolonged soil saturation.

Riparian Scrub/Riparian Woodland. Riparian Scrub/Riparian Woodland communities are characterized as sparse to dense corridors of vegetation occurring adjacent to streams and rivers or in areas with a high ground water table. These communities occur as corridors bordering coastal and their tributaries. The structure of riparian communities within the planning area is variable and alternates between dense tree thickets (riparian woodland) and open, shrub dominated areas (riparian scrub). In addition, species composition often varies along the course of each coastal stream in conjunction with changes in topography. The extent of the vegetation in riparian communities within the planning area is highly dependent upon factors such as seasonal changes in flow rate, the size and nature of the streambank and by historical patterns of land use. Riparian scrub communities generally occur along perennial and intermittent streams and are typically dominated by willows (*Salix* spp.) and other various shrubs. Species like poison hemlock (*Conium maculatum*), wild blackberry (*Rubus ursinus*), twinberry (*Lonicera involucrata*), and sting nettle (*Urtica holosericea*) often comprise riparian scrub understory. Riparian woodland communities within the planning area are dominated by black cottonwood (*Populus trichocarpa*) and sycamore (*Platanus racemosa*). Understory species occurring within these communities.

Coastal Foredune. Coastal foredune communities usually occur adjacent to open sandy beaches and barren active dunes near the coast. These communities often integrate with dune scrub communities on more stabilized dunes away from the coast and in areas with well established dune hummocks (Holland, 1986). Because of the harsh environmental conditions present, coastal strand communities usually contain low species diversity. Plants occurring in these areas are tolerant of repeated burial by shifting sands and leaves of the members of these communities are usually small and somewhat succulent. Coverage within these areas varies from nearly complete to scattered.

Central Dune Scrub. Central dune scrub communities are generally located inland from coastal foredune communities and open sandy beaches. They are primarily established on recent to ancient coastal sand dunes. Away from the coast, these communities typically integrate with chaparral, coast live oak woodland or coastal sage scrub communities. Because central dune scrub communities are usually located in the wind shadow of active dune areas and they contain more vegetative cover, the soils tend to be considerably more stable than those of foredune areas. Species composition is highly variable within these communities, but generally contain high species diversity. Characteristic species include a variety of semi-woody shrubs such as mock heather (*Ericameria ericoides*), sand almond (*Prunus fasciculata* var. *punctata*), dune buckwheat (*Eriogonum parvifolium*), coastal silver lupine (*Lupinus chamissonis*), black sage (*Salvia mellifera*), and California sagebrush (*Artemisia californica*). Understory of central dune scrub communities is typically sparse and primarily comprised of various forbs and lichens.

Central (Lucian) Sage Scrub. Central sage scrub communities are found along the California coast south of the San Francisco Bay area (Holland, 1986). Most often, these communities occur in pockets in the outer and inner southern Coast Ranges and in scattered areas along the immediate coast. Species composition is highly variable in coastal scrub areas and is generally dependent upon topography, soils and slope aspect. Plants occurring in coastal scrub communities are characterized as being aromatic, low growing and drought tolerant. Common plant species include California sagebrush, coyote brush (*Baccharis pilularis*), monkeyflower (*Mimulus* spp.), poison oak (*Toxicodendron diversilobum*), California buckwheat (*Eriogonum fasciculatum*) and black sage (*Salvia mellifera*). Understory within coastal scrub communities is generally sparse and includes forbs such as plantain (*Plantago* sp.) and yarrow (*Achillea* sp.).

Central Maritime Chaparral. Central maritime chaparral communities occur in windswept areas of central and northern California. In San Luis Obispo County, they are most often established on well-drained, sandy substrates within the zone of summer fog incursion (Holland, 1986). Maritime chaparral is found to form a mosaic with central dune scrub, coastal scrub, and coast live oak communities. Stiff, woody shrubs such as *Arctostaphylos* spp. and *Ceanothus* spp. dominate maritime chaparral communities. Other species frequently occurring as part of this community include toyon (*Heteromeles arbutifolia*), coffeeberry (*Rhamnus californica*), black sage, chamise (*Adenostoma fasciculatum*), and poison oak. Occasionally, in areas exposed to strong coastal winds, coast live oak (*Quercus agrifolia*) will also form a part of the community.

Ruderal (Disturbed habitat). Ruderal vegetation has been significantly disturbed by agriculture, construction, or other land clearing activities. Disturbed habitat occurs throughout the county in vacant lots, abandoned fields, roadsides, agricultural fields, greenbelts, parks, golf courses, and development areas. The primary difference between non-native grasslands and ruderal habitats are that the soil is often disturbed in ruderal habitats, which also lack the native wildflowers found in the grasslands. Characteristic uncultivated species recorded in disturbed

habitats include non-native species such as wild mustard, wild radish (*Raphanus sativus*), Russian thistle (*Salsola iberica*), castor bean (*Ricinus communis*), wild oat, soft chess, red brome, ripgut grass (*Bromus diandrus*), sweet fennel (*Foeniculum vulgare*), Bermuda grass (*Cynodon dactylon*), and red stem filaree.

VEGETATION⁶

The County is comprised of multiple different plant communities. The wide variety of vegetation types add immeasurable beauty to the county's landscape, whether it be the oak studded hillsides, pines along a mountain ridge, or lush willows along the streams. In addition to the beauty, plants are a vital part of the ecosystem: shelter for wildlife; cleansing the air; preventing soil erosion and water pollution; and as food for man and animals.

As discussed in the regulatory framework section, special-status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) under the federal Endangered Species Act (ESA); those considered “species of concern” by the USFWS; those listed or proposed for listing as rare, threatened, or endangered by the California Department of Fish and Game (CDFG) under the California Endangered Species Act (CESA); animals designated as “Species of Special Concern” by the CDFG; and the CDFG *Special Vascular Plants, Bryophytes, and Lichens List* (September 2004).

Based on information obtained by the review of existing literature and a search of the CNDDB, 103 special-status plant species were identified as having the potential to occur within the County. **Table A3-2** lists each sensitive plant species that has the potential to occur or is known to occur within the County, including the name and legal status of these species organized by planning area.

⁶ This section is excerpted from the following County documents: Open Space Element (San Luis Obispo County 1998) and the Estero Area Plan Final Impact Report (San Luis Obispo County 2003), and the San Luis Obispo County Affordable Housing Ordinance Final Environmental Impact Report (San Luis Obispo 2007).

TABLE A3-2 SENSITIVE PLANT SPECIES POTENTIAL/KNOWN OCCURRENCES WITHIN SAN LUIS OBISPO COUNTY

Scientific Name	Common Name	Federal	State	CNPS	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
<i>Abies bracteata</i>	bristlecone fir	None	None	1B.3	S2.3							•	•							
<i>Agrostis hooveri</i>	Hoover's bent grass	None	None	1B.2	S2.2					•	•				•	•				•
<i>Allium hickmanii</i>	Hickman's onion	None	None	1B.2	S2.2								•							
<i>Allium howellii</i> var. <i>clokeyi</i>	Mt. Pinos onion	None	None	1B.3	S2.3						•							•		
<i>Arctostaphylos cruzensis</i>	Arroyo de la Cruz manzanita	None	None	1B.2	S2.2	•		•				•	•		•	•	•			
<i>Arctostaphylos hookeri</i> ssp. <i>hearthiorum</i>	Hearst's manzanita	None	None	1B.2	S1.2								•							
<i>Arctostaphylos luciana</i>	Santa Lucia manzanita	None	None	1B.2	S2.2	•		•			•			•			•			
<i>Arctostaphylos montereyensis</i>	Monterey manzanita	None	None	1B.2	S2.1							•								
<i>Arctostaphylos morroensis</i>	Morro manzanita	T	None	1B.1	S2.2			•								•	•			
<i>Arctostaphylos osoensis</i>	Oso manzanita	None	None	1B.2	S1.2			•												

Scientific Name	Common Name	Federal	State	CNPS	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Arctostaphylos pechoensis	Pecho manzanita	None	None	1B.2	S2.2	•		•			•				•	•	•			
Arctostaphylos pilosula	Santa Margarita manzanita	None	None	1B.2	S2.2	•			•	•	•	•		•		•	•			
Arctostaphylos rudis	sand mesa manzanita	None	None	1B.2	S2.2															•
Arctostaphylos tomentosa ssp. daciticola	dacite manzanita	None	None	1B.1	S1.1			•												
Arctostaphylos wellsii	Wells's manzanita	None	None	1B.1	S2.1				•					•	•	•	•			•
Arenaria paludicola	marsh sandwort	E	E	1B.1	S1.1			•							•	•			•	•
Aristocapsa insignis	Indian Valley spineflower	None	None	1B.2	S2.2						•							•		
Astragalus didymocarpus var. milesianus	Miles's milk-vetch	None	None	1B.2	S2.2	•	•	•	•					•			•			•
Atriplex cordulata	heartscale	None	None	1B.2	S2.2													•		
Atriplex joaquiniana	San Joaquin spearscale	None	None	1B.2	S2.1			•												
Atriplex serenana var. davidsonii	Davidson's saltscale	None	None	1B.2	S2														•	•
Atriplex vallicola	Lost Hills crownscale	None	None	1B.2	S1.1													•		

Scientific Name	Common Name	Federal	State	CNPS	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Baccharis plummerae ssp. glabrata	San Simeon baccharis	None	None	1B.2	S1.2	•							•							
Blepharizonia plumosa	big tarplant	None	None		S1.1													•		
Bloomeria humilis	dwarf goldenstar	None	None	1B.2	S1.1								•							
Calochortus clavatus var. recurvifolius	Arroyo de la Cruz mariposa lily	None	None	1B.2	S1.2								•							
Calochortus obispoensis	San Luis mariposa lily	None	None	1B.2	S2.1			•					•	•		•				
Calochortus palmeri var. palmeri	Palmer's mariposa lily	None	None	1B.2	S2.1				•		•									
Calochortus simulans	San Luis Obispo mariposa lily	None	None	1B.3	S2.3		•			•	•			•		•	•	•		
Calochortus weedii var. vestus	late-flowered mariposa lily	None	None	1B.2	S2.2						•							•		
Calycadenia villosa	dwarf calycadenia	None	None	1B.1	S2.1	•	•				•	•						•		
Calystegia subacaulis ssp. episcopolis	Cambria morning-glory	None	None	1B.2	S1.2			•						•		•	•			

Scientific Name	Common Name	Federal	State	CNPS	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
<i>Camissonia hardhamiae</i>	Hardham's evening-primrose	None	None	1B.2	S1.2	•			•					•				•		
<i>Carex obispoensis</i>	San Luis Obispo sedge	None	None	1B.2	S2.2	•		•		•	•	•		•			•			
<i>Castilleja densiflora</i> ssp. <i>obispoensis</i>	Obispo Indian paintbrush	None	None	1B.2	S2.2	•		•						•	•	•	•			
<i>Caulanthus californicus</i>	California jewel-flower			1B.1	S1.1													•		
<i>Caulanthus coulteri</i> var. <i>lemmonii</i>	Lemmon's jewelflower	None	None	1B.2	S2.2	•					•	•						•		
<i>Ceanothus hearstiorum</i>	Hearst's ceanothus	None	None	1B.2	S1.2								•							
<i>Ceanothus maritimus</i>	maritime ceanothus	None	None	1B.2	S2.2								•							
<i>Centromadia parryi</i> ssp. <i>congdonii</i>	Congdon's tarplant	None	None	1B.2	S3.2			•									•			
<i>Chlorogalum pomeridianum</i> var. <i>minus</i>	dwarf soaproot	None	None	1B.2	S1.2									•			•			
<i>Chlorogalum purpureum</i> var. <i>reductum</i>	Camatta Canyon amole	T	R	1B.1	S1.1						•							•		

Scientific Name	Common Name	Federal	State	CNPS	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Chorizanthe breweri	Brewer's spineflower	None	None	1B.3	S2.2			•					•	•		•	•			
Chorizanthe pungens var. pungens	Monterey spineflower	T	None	1B.2	S2.2								•							
Chorizanthe rectispina	straight-awned spineflower	None	None	1B.3	S1.2	•	•			•	•			•		•		•		
Cirsium fontinale var. obispoense	Chorro Creek bog thistle	E	E	1B.2	S1.2	•					•		•	•			•			
Cirsium loncholepis	La Graciosa thistle	E	T	1B.1	S2.2										•	•	•		•	
Cirsium occidentale var. compactum	compact cobwebby thistle	None	None	1B.2	S2.1			•					•							
Cirsium rothophilum	Surf thistle	None	T	1B.2	S2.2											•			•	
Clarkia speciosa ssp. immaculata	Pismo clarkia	E	R	1B.1	S1.1											•	•			•
Cordylanthus maritimus ssp. maritimus	salt marsh bird's-beak	E	E	1B.2	S2.1			•												
Deinandra halliana	Hall's tarplant	None	None	1B.1	S1.1											•		•		

Scientific Name	Common Name	Federal	State	CNPS	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Deinandra increscens ssp. foliosa	leafy tarplant	None	None	1B.2	S2.2				•	•	•		•				•			
Delphinium parryi ssp. blochmaniae	dune larkspur	None	None	1B.2	S2.2						•						•		•	•
Delphinium recurvatum	recurved larkspur	None	None	1B.2	S2.2													•		
Delphinium umbraculorum	umbrella larkspur	None	None	1B.3	S3.3	•			•		•									
Dithyrea maritima	beach spectaclepod	None	T	1B.1	S2.1			•							•	•			•	
Dudleya abramsii ssp. bettinae	San Luis Obispo serpentine dudleya	None	None	1B.2	S1.2	•		•									•			
Dudleya abramsii ssp. murina	San Luis Obispo dudleya	None	None	1B.3	S2.3			•								•	•			
Dudleya blochmaniae ssp. blochmaniae	Blochman's dudleya	None	None	1B.1	S2.1	•		•					•				•			
Entosthodon kochii	Koch's cord-moss	None	None	1B.3	S1.3	•														
Eriastrum luteum	yellow-flowered eriastrum	None	None	1B.2	S2.2	•	•			•	•	•		•				•		
Erigeron blochmaniae	Blochman's leafy daisy	None	None	1B.2	S2.2			•							•	•			•	•

BIOLOGICAL RESOURCES

APPENDIX 3

Scientific Name	Common Name	Federal	State	CNPS	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Eriodictyon altissimum	Indian Knob mountainbalm	E	E	1B.1	S2.2			•								•				
Eriogonum temblorense	Temblor buckwheat	None	None	1B.2	S2.2													•		
Erodium macrophyllum	round-leaved filaree	None	None		S2.1		•				•			•				•		
Eryngium aristulatum var. hooveri	Hoover's button-celery	None	None	1B.1	S2.1								•				•			
Eschscholzia rhombipetala	diamond-petaled California poppy	None	None	1B.1	S1.1													•		
Fritillaria ojaiensis	Ojai fritillary	None	None	1B.2	S1.2						•									
Fritillaria viridea	San Benito fritillary	None	None	1B.2	S3.2			•						•			•			
Galium hardhamiae	Hardham's bedstraw	None	None	1B.3	S2.3	•						•								
Horkelia cuneata ssp. puberula	mesa horkelia	None	None		S2.1		•						•	•	•	•	•			
Horkelia cuneata ssp. sericea	Kellogg's horkelia	None	None	1B.1	S1.1									•					•	•
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	None	None	1B.1	S2.1			•					•					•		

Scientific Name	Common Name	Federal	State	CNPS	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
<i>Lasthenia macrantha</i> ssp. <i>macrantha</i>	perennial goldfields	None	None	1B.2	S2.2															
<i>Layia heterotricha</i>	pale-yellow layia	None	None	1B.1	S1.1							•								
<i>Layia jonesii</i>	Jones's layia	None	None	1B.2	S1.1	•		•							•	•	•	•		
<i>Layia munzii</i>	Munz's tidy-tips	None	None	1B.2	S1.1													•		
<i>Lepidium jaredii</i> ssp. <i>album</i>	Panoche pepper-grass	None	None	1B.2	S1.2													•		
<i>Lepidium jaredii</i> ssp. <i>jaredii</i>	Jared's pepper-grass	None	None	1B.2	S1.2		•							•				•		
<i>Lupinus ludovicianus</i>	San Luis Obispo County lupine	None	None	1B.2	S2.2				•	•				•		•				
<i>Lupinus nipomensis</i>	Nipomo Mesa lupine	E	E	1B.1	S1.1														•	•
<i>Madia radiate</i>	showy madia	None	None	1B.1	S2.1						•							•		
<i>Malacothamnus davidsonii</i>	Davidson's bush mallow	None	None	1B.2	S1.1							•								
<i>Malacothamnus palmeri</i> var. <i>involucratus</i>	Carmel Valley bush mallow	None	None	1B.2	S2.2	•								•						
<i>Malacothamnus palmeri</i> var. <i>palmeri</i>	Santa Lucia bush mallow	None	None	1B.2	S2.2	•							•	•						

Scientific Name	Common Name	Federal	State	CNPS	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Malacothrix saxatilis var. arachnoidea	Carmel Valley malacothrix	None	None	1B.2	S2.2	•														
Microseris paludosa	marsh microseris	None	None	1B.2	S2.2								•							
Monardella crisper	crisp monardella	None	None	1B.2	S2.2			•							•				•	•
Monardella frutescens	San Luis Obispo monardella	None	None	1B.2	S2.2										•	•			•	
Monardella palmeri	Palmer's monardella	None	None	1B.2	S2.2			•		•		•	•	•			•			
Monolopia congdonii	San Joaquin woollythreads	E	None	1B.2	S3.2													•		
Nasturtium gambelii	Gambel's water cress	E	T	1B.1	S1.1														•	•
Navarretia nigelliformis ssp. radians	shining navarretia	None	None	1B.2	S1.1	•	•							•				•		
Navarretia prostrata	prostrate navarretia	None	None	1B.1	S2.1	•														
Pedicularis dudleyi	Dudley's lousewort	None	R	1B.2	S2.2								•							
Pinus radiata	Monterey pine	None	None	1B.1	S1.1								•							
Plagiobothrys uncinatus	hooked popcorn-flower	None	None	1B.2	S2.2	•						•								

Scientific Name	Common Name	Federal	State	CNPS	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Poa diaboli	Diablo Canyon blue grass	None	None	1B.2	S1.2										•	•				
Sanicula maritima	adobe sanicle	None	R	1B.1	S2.2			•					•				•			
Scrophularia atrata	black-flowered figwort	None	None	1B.2	S2.2										•	•				
Senecio aphanactis	rayless ragwort	None	None	2.2	S1.2		•				•						•	•		
Sidalcea hickmanii ssp. anomala	Cuesta Pass checkerbloom	None	R	1B.2	S1.2									•			•			
Sidalcea hickmanii ssp. Parishii	Parish's checkerbloom	C	R	1B.2	S1.2						•									
Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	None	None	1B.2	S2.2	•		•					•			•	•			
Stylocline masonii	Mason's neststraw	None	None	1B.1	S1.1													•		
Suaeda californica	California seablite	E	None	1B.1	S1.1			•												
Sulcaria isidiifera	splitting yarn lichen	None	None	None	S1.1			•												
Symphyotrichum defoliatum	San Bernardino aster	None	None	1B.2	S3.2		•								•	•		•	•	•

Scientific Name	Common Name	Federal	State	CNPS	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Trifolium depauperatum var. hydrophilum	saline clover	None	None	1B.2	S2.2												•			
Triteleia ixioides ssp. Cookie	Cook's triteleia	None	None	1B.3	S2.3	•						•	•							
Tropidocarpum capparideum	caper-fruited tropidocarpum	None	None	1B.1	S1.1									•						
Viola aurea	golden violet	None	None	2.2	S2,S3													•		

Source: San Luis Obispo County Affordable Housing Ordinance EIR, 2007 (CNDDDB database queried on December 11, 2006)

Notes:

Federal: T = threatened, E = endangered, C = candidate

State: T = threatened, E = endangered, R = rare

California Native Plant Society (CNPS):

List 1B = rare, threatened, endangered, in California and elsewhere.

List 2 = rare, threatened, or endangered in California, but more common elsewhere.

1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

2 - Fairly endangered in California (20-80% occurrences threatened)

3 - Not very endangered in California (<20% of occurrences threatened or no current threats known)

California Department of Fish and Game (CDFG):

S1 = Less than 6 viable Eos or less than 1,000 individuals or less than 2,000 acres;

S1.1 = very threatened,

S1.2 = threatened,

S1.3 = not very threatened or no current threats known.

S2 = 6-20 Eos or 1,000-3,000 individuals or 2,000-10,000 acres;

S2.1 = very threatened,

S2.2 = threatened,

S2.3 = not very threatened or no current threats known.

S3 = 21-80 Eos or 3,000-10,000 individuals or 10,000-50,000 acres

S3.1 = very threatened,

S3.2 = threatened,

S3.3 = not very threatened or no current threats known.

WILDLIFE⁷

There are a number of rare, threatened, and endangered species known to occur in the county, and others which have yet to be identified. Based on information obtained by the review of existing literature, a search of the CNDDDB, and analysis of the habitat types present conducted as part of the environmental impact assessment of the County's proposed Affordable Housing Ordinance (San Luis Obispo, 2007), 53 special-status animal species were identified as potentially occurring within the County. **Table A3-3** provides a listing of each sensitive wildlife species that has the potential to occur or is known to occur within the County by planning area.

The San Joaquin Kit Fox and Morro Shoulderband Snail are high priority species in the County. The County has developed a Habitat Conservation Plans (HCP) for the Morro Shoulderband Snail, and is currently seeking funding/preparing an HCP for the Kit Fox in the County. The following wildlife species appear to be the known priority species, among others:

Fish. Native fish species which may potentially occur in streams within the County include the partially-armored threespine stickleback (*Gasterosteus aculeatus microcephalus*), speckled dace (*Rhinichthys osculus*), and prickly sculpin (*Cottus asper*). The non-native mosquitofish (*Gambusia affinis*), is commonly found in association with these native freshwater species. Resident species of rainbow trout (*Oncorhynchus mykiss*) may also be present in the upper reaches of perennial streams in the planning area. Migratory steelhead trout (*Oncorhynchus mykiss*) are known to occur seasonally in coastal streams such as Chorro and Toro Creeks. In addition, marine species such as staghorn sculpin (*Leptocottus armatus*) will often enter coastal lagoons and estuarine habitats to feed and/or reproduce during the winter and spring when sand bars at the mouths of the streams have been breached.

Amphibians. Various amphibian species potentially utilize coastal streams and adjoining riparian corridors within San Luis Obispo County. The more common of these amphibians include native species such as Pacific chorus frog (*Pseudacris regilla*), western toad (*Bufo boreas*), ensatina (*Ensatina eschscholtzii*), newts (*Taricha* spp.), as well as the non-native bullfrog (*Rana catesbiana*). Other less-common amphibians that are known from the planning area include tiger salamander (*Ambystoma tigrinum*) and California red-legged frog (*Rana aurora draytoni*). Some of the amphibians that occur within the Estero planning area will utilize adjoining protected upland areas where sufficient moisture is present.

⁷ This section is excerpted from the following County documents: Open Space Element (San Luis Obispo County 1998) and the Estero Area Plan Final Impact Report (San Luis Obispo County 2003), and the San Luis Obispo County Affordable Housing Ordinance Final Environmental Impact Report (San Luis Obispo 2007).

Reptiles. Reptiles occur in a diverse array of habitats throughout San Luis Obispo County. Species which are expected to be present include, but are not limited to, western skink (*Eumeces skiltonianus*), southern alligator lizard (*Gerrhonotus multicarinatus*), western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis melanoleucus*), common kingsnake (*Lampropeltis getulus*), California horned lizard (*Phrynosoma coronatum*), common garter snake (*Thamnophis sirtalis*), striped garter snake (*Thamnophis couchii*), western rattlesnake (*Crotalus viridis*), and southwestern pond turtle (*Clemmys marmorata pallida*).

Mammals. The assorted habitats of the County support a variety of mammals including Virginia opossum (*Didelphis virginiana*), black-tailed jack rabbit (*Lepus californica*), Audubon's cottontail (*Sylvilagus audubonii*), Botta's pocket gopher (*Thomomys bottae*), western gray squirrel (*Sciurus griseus*), California ground squirrel (*Citellus beecheyi*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), mountain lion (*Felis concolor*), striped and Western spotted skunk (*Mephitis mephitis*, *Spilogale gracilis*), badger (*Taxidea taxus*), black-tailed deer (*Odocoileus hemionus*), long-tailed weasel (*Mustela frenata*), ringtail (*Bassaricus astutus*) and several species of rodents and bats. Marine mammals, such as the Southern sea otter (*Enhydra lutris*), California sea lion (*Zalophus californianus*), and harbor seal (*Phoca vitulina*) utilize marine intertidal and estuarine habitats for feeding, and haul-out along rocky shore areas to rest.

Birds. Birds are found in every habitat throughout the County. Common bird species occurring within San Luis Obispo are identified below using standard nomenclature. Typical species that utilize open grassland areas and fields include red-tailed hawk, red-shouldered hawk, American kestrel, Cooper's hawk, white-shouldered kite, western meadowlark, Say's phoebe, and western bluebird. Riparian habitats support Anna's hummingbird, northern flicker, scrub jay, bushtit, black phoebe, belted kingfisher, black-crowned night heron and white-breasted nuthatch. Woodlands and coastal scrub areas provide resources for California quail, acorn woodpecker, brown towhee, and dark-eyed junco. Wading birds such as the snowy and great egret, and great blue heron frequent and utilize coastal saltmarsh and freshwater marsh habitats for feeding. Migratory shorebirds, including snowy plovers, avocets, sandpipers, and marbled godwits, occur in and utilize open sandy beach areas and estuarine habitats in the planning area. Telephone poles and tall trees provide roosting and hunting perches for raptors including red-tailed and red-shouldered hawks. Windrow trees, such as eucalyptus, often provide suitable nesting sites for birds of prey such as the great horned owl and barn owl.

Insects. Insects occur in all habitats within the County. They are considered valuable food sources for a variety of wildlife and often function as indicators as to the overall health of various habitats, particularly of aquatic habitats. The variety of insect species occurring within the planning area is extensive and representatives from all insect orders are expected to occur.

TABLE A3-3 SENSITIVE ANIMAL SPECIES POTENTIAL/KNOWN OCCURRENCES WITHIN SAN LUIS OBISPO COUNTY

Scientific Name	Common Name	Federal	State	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Accipiter cooperii	Cooper's hawk	None	None	SC			•		•	•	•		•	•	•		•	•	
Accipiter striatus	sharp-shinned hawk	None	None	SC															•
Agelaius tricolor	tricolored blackbird	None	None	SC												•	•		
Ambystoma californiense	California tiger salamander	T	None	SC				•		•						•	•		
Ammospermophilus nelsoni	Nelson's antelope squirrel	None	T	None													•		
Anniella pulchra pulchra	silvery legless lizard	None	None	SC			•			•			•				•		
Antrozous pallidus	pallid bat	None	None	SC	•		•					•	•			•	•		
Asio otus	long-eared owl	None	None	SC													•		
Athene cunicularia	burrowing owl	None	None	SC	•											•	•	•	
Branchinecta longiantenna	longhorn fairy shrimp	E	None	None													•		
Branchinecta lynchi	vernal pool fairy shrimp	T	None	None	•	•				•			•				•		
Buteo regalis	ferruginous hawk	None	None	SC								•	•						

Scientific Name	Common Name	Federal	State	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Charadrius alexandrinus nivosus	western snowy plover	T	None	SC			•							•				•	
Charadrius montanus	mountain plover	None	None	SC													•		
Coccyzus americanus occidentalis	western yellow-billed cuckoo	C	E	None												•			
Coelus globosus	globose dune beetle	None	None	None			•												
Corynorhinus townsendii	Townsend's big-eared bat	None	None	SC									•						
Cypseloides niger	black swift	None	None	SC								•							
Danaus plexippus	monarch butterfly	TP	None	None	•		•					•		•	•	•		•	•
Dipodomys heermanni morroensis	Morro Bay kangaroo rat	E	E	None			•												
Dipodomys ingens	giant kangaroo rat	E	E	None													•		
Dipodomys nitratoideus nitratoideus	Tipton kangaroo rat	E	E	None													•		

Scientific Name	Common Name	Federal	State	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Emys (=Clemmys) marmorata pallida	southwestern pond turtle	None	None	SC	•											•			
Eremophila alpestris actia	California horned lark	None	None	SC												•			
Eucyclogobius newberryi	tidewater goby	E	None	SC	•		•					•		•	•			•	
Eumops perotis californicus	western mastiff bat	None	None	SC												•			
Euphilotes enoptes smithi	Smith's blue butterfly	E	None	None								•							
Gambelia sila	blunt-nosed leopard lizard	E	E	None													•		
Gila orcuttii	arroyo chub	None	None	SC														•	
Gymnogyps californianus	California condor	E	E	None				•		•							•		
Haliaeetus leucocephalus	bald eagle	T	E	None	•						•								
Helminthoglypta walkeriana	Morro shoulderband (=banded dune) snail	E	None	None			•								•				
Laterallus jamaicensis coturniculus	California black rail	None	T	None			•												

Scientific Name	Common Name	Federal	State	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
Masticophis flagellum ruddocki	San Joaquin whipsnake	None	None	SC													•		
Neotoma lepida intermedia	San Diego desert woodrat	None	None	SC			•							•					
Neotoma macrotis luciana	Monterey dusky-footed woodrat	None	None	SC	•														
Nyctinomops macrotis	big free -tailed bat	None	None	SC			•												
Oncorhynchus mykiss irideus	steelhead - south/central California coast esu	T	None	None	•		•	•			•	•	•	•	•	•		•	
Onychomys torridus tularensis	Tulare grasshopper mouse	None	None	SC													•		
Perognathus inornatus psammophilus	Salinas pocket mouse	None	None	SC	•								•						
Phrynosoma coronatum (frontale population)	Coast (California) horned lizard	None	None	SC			•								•	•	•		
Progne subis	purple martin	None	None	SC									•						
Rallus longirostris obsoletus	California clapper rail	E	E	None			•												

Scientific Name	Common Name	Federal	State	DFG	Adelaida	El Pomar-Estrella	Estero	Huasna-Lopez	Las Pilitas	Los Padres	Nacimiento	North Coast	Salinas River	San Luis Bay Coastal	San Luis Bay Inland	San Luis Obispo	Shandon-Carrizo	South County Coastal	South County Inland
<i>Rana aurora draytonii</i>	California red-legged frog	T	None	SC	•		•	•		•		•	•	•	•	•	•	•	•
<i>Rana boylei</i>	foothill yellow-legged frog	None	None	SC								•							
<i>Spea</i> (=Scaphiopus) <i>hammondii</i>	western spadefoot	None	None	SC	•				•	•			•				•		•
<i>Sterna antillarum browni</i>	California least tern	E	E	None														•	
<i>Taricha torosa torosa</i>	Coast Range newt	None	None	SC	•			•				•	•						
<i>Taxidea taxus</i>	American badger	None	None	SC	•	•		•		•			•		•	•	•		•
<i>Thamnophis hammondi</i>	two-striped garter snake	None	None	SC	•			•		•		•							
<i>Trimerotropis occulens</i>	Lompoc grasshopper	None	None	None									•						
<i>Tryonia imitator</i>	mimic tryonia (=California brackishwater snail)	None	None	None			•							•				•	
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	E	T	None	•	•				•			•				•		

Source: San Luis Obispo County Affordable Housing Ordinance EIR, 2007 (CNDDDB database queried on December 11, 2006)

Notes:

Federal: C = candidate, T = threatened, E = endangered

State: T = threatened, E = endangered

California Department of Fish and Game (CDFG): SC = Species of Concern

Regulatory Framework

Federal and State laws regulate wetlands, stream channels, and plant and animal species vulnerable to change or threatened with extinction. The jurisdiction, resource management practices, and code enforcement activities of the federal and State regulatory agencies vary depending on the specific sensitive resource. Wetlands and special-status plants and animals listed as “endangered” or “threatened” receive the highest protection. Other plant and animal species that are not listed are still considered vulnerable enough to be recognized as special status species. In addition, a number of unique natural communities (sensitive natural communities) are recognized by the California Department of Fish and Game because of their scarcity and continued loss as a result of development. The County development review process typically requires a site assessment by qualified professionals to confirm whether any sensitive resources could be affected, and to identify measures necessary to protect those resources and mitigate potential impacts. Detailed surveys are necessary where there is a potential for occurrence of sensitive resources. Consultation and permit authorization from regulatory agencies may be required where proposed development would affect essential habitat for listed special-status species or jurisdictional wetlands, although avoidance is the preferred mitigation whenever feasible. Enactment of local ordinances also serves to regulate potential loss of sensitive resources and establishes standards for protection and mitigation.

Regulation of plants, wildlife and their habitat, wetlands and riparian areas, occurs through a combination of federal, state, and local regulations, policies, and programs. Presentation of the regulatory framework provides the opportunity to identify jurisdictional responsibilities of key issues for the county, such as protection of listed species.

FEDERAL REGULATIONS AND POLICIES

Endangered Species Act

The Endangered Species Act of 1973 (ESA) provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. In general, the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) is responsible for protection of ESA-listed marine species and anadromous fish while other listed species come under the U.S. Fish and Wildlife Service (USFWS) jurisdiction. Endangered refers to species, subspecies, or distinct population segments that are in danger of extinction throughout all or a significant portion of their range while threatened species applies to species, subspecies, or distinct population segments that are likely to become endangered in the near future. The law prohibits any action, administrative or real, that results in a “taking” of a listed species, or adversely affects habitat. Likewise, import, export, interstate, and foreign commerce of listed species are all prohibited. “Take” is defined in the Endangered Species Act (ESA) as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or

endangered species. Harm may include significant habitat modification where it actually kills or injures a listed species through impairment of essential behavior (e.g., nesting or reproduction).

Two key provisions of the ESA, commonly referred to as “Section 10” and “Section 7,” are summarized below. Section 10 provides a means for nonfederal entities (states, local agencies, and private parties) that are not permitted or funded by a federal agency to receive authorization to disturb, displace, or kill (i.e., take) threatened and endangered species. An incidental take permit is required when non-Federal activities will result in “take” of threatened or endangered wildlife. A habitat conservation plan (HCP) must accompany an application for an incidental take permit. The purpose of the habitat conservation planning process associated with the permit is to ensure there is adequate minimizing and mitigating of the effects of the authorized incidental take. The purpose of the incidental take permit is to authorize the incidental take of a listed species, not to authorize the activities that result in take.

Section 7 of the Endangered Species Act directs all Federal agencies to use their existing authorities to conserve threatened and endangered species and, in consultation with the Service, to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. Section 7 applies to management of Federal lands as well as other Federal actions that may affect listed species, such as Federal approval of private activities through the issuance of Federal permits, licenses, or other actions.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 imposes criminal and civil penalties for persons in the U.S. or within U.S. jurisdiction lands who take, possess, sell, purchase, barter, offer to sell or purchase or barter, transport, export or import a bald eagle or golden eagle, alive or dead, of any part, nest, or egg of these eagles; or violates any permit or regulations issued under the Act without the permission of the Secretary of the Interior. The Secretary of the Interior may permit the taking, possession, and transportation of bald and golden eagles and nests for scientific or religious purposes, or for the protection of wildlife, agricultural, or other interests, if such actions are compatible with eagle preservation. The Secretary of the Interior may authorize the take of golden eagle nests that interfere with resource development or recovery operations.

National Environmental Policy Act (NEPA)

The National Environmental Policy Act (NEPA) mandates all federal agencies or departments to disclose their projects’ effect on the environment. To meet this requirement, federal agencies prepare a detailed statement known as an Environmental Impact Statement (EIS). An EIS must include the environmental impacts of the proposed action; unavoidable adverse environmental impacts; alternatives including no action; the relationship between short term uses of the environment and maintenance of long-term ecological productivity; irreversible and irretrievable

commitments of resources; and secondary/cumulative effects of implementing the proposed action. NEPA was created to ensure federal agencies and federal actions, such as federal approval of private activities through the issuance of federal permits, licenses, or other actions, consider the environmental impacts of their actions and decisions.

Migratory Bird Treaty Act

Migratory birds are protected under the MBTA of 1918 (16 USC 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The vast majority of birds found in the study area are protected under the MBTA. Thus, project construction has the potential to directly take nests, eggs, young or individuals of these protected species. Further, construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to the abandonment of nests, a violation of the MBTA.

STATE REGULATIONS AND POLICIES

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is the regulatory framework by which California public agencies identify and mitigate significant environmental impacts. A project normally has a significant environmental impact on biological resources if it substantially affects a rare or endangered species or the habitat of that species; substantially impacts riparian habitat wetlands or other sensitive communities; substantially interferes with the movement of resident or migratory fish or wildlife; or substantially diminishes habitat for fish, wildlife, or plants.

According to the State CEQA Guidelines it is assumed that a proposed project would result in a significant impact if it would:

- Have a substantial adverse impact, either directly or through habitat modifications, any
- endangered, rare, or threatened species, as listed in Title 14 of the California Code of Regulations (§670.2 or 670.5) or in Title 50, Code of Federal Regulations (§17.11 or 17.12);
- Have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service;

- Adversely impact federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan or other approved local, regional, or state habitat conservation plan.

California Forest Practice Rules

The California Forest Practice Rules (Rules) (Title 14, California Code of Regulations Chapters 4, 4.5 and 10) implement the provisions of the Z'berg-Nejedly Forest Practice Act of 1973. Under the Rules, owners of timberland to another use (as defined in Section 1102) must obtain a Timberland Conversion Permit from the California Department of Forestry and Fire Protection.

California Endangered Species Act

The California Endangered Species Act (CESA) establishes state policy to conserve, protect, restore, and enhance endangered or threatened species and their habitats. The CESA is administered by the California Department of Fish and Game (DFG). The CESA prohibits all persons from taking species that are state listed as endangered or threatened except under certain circumstances. Definitions of endangered and threatened species in the CESA parallel those defined in the ESA. Take authorizations from California Department of Fish and Game (DFG) are required for any unavoidable impact on state-listed species resulting from proposed projects. Before considering a species for protected status, DFG designates the species as a species of special concern. Species of special concern are those species for which DFG has information to indicate that the species is declining.

California Fish and Game Code

The California Fish and Game Commission protects wildlife and plants listed as endangered or threatened under the California Endangered Species Act (CESA). The California Fish and Game Code identifies species that are fully protected and protects all birds and their nests. The DFG also has jurisdictional authority over streams and lakes and the wetland resources associated with these aquatic systems under California Fish and Game Code Sections 1600 et seq.

Fully Protected Species

California statutes also accord “fully protected” status to a number of specifically identified birds, mammals, reptiles, and amphibians. Section 3505 of the California Fish and Game Code makes it unlawful to “take” “any egret or egret, osprey, bird of paradise, gaura, numidi, or any part of such a bird.”

Section 3511 protects from “take” the following “fully protected birds”: (a) American peregrine falcon (*Falco peregrinus anatum*); (b) brown pelican (*Pelecanus occidentalis*); (c) California black rail (*Laterallus jamaicensis coturniculus*); (d) California clapper rail (*Rallus longirostris obsoletus*); (e) California condor (*Gymnogyps californianus*); (f) California least tern (*Sterna albifrons browni*); (g) golden eagle; (h) greater sandhill crane (*Grus canadensis tabida*); (i) light-footed clapper rail (*Rallus longirostris levipes*); (j) southern bald eagle (*Haliaeetus leucocephalus leucocephalus*); (k) trumpeter swan (*Cygnus buccinator*); (l) white-tailed kite (*Elanus leucurus*); and (m) Yuma clapper rail (*Rallus longirostris yumanensis*).

California Fish and Game Code Section 4700 identifies the following “fully protected mammals” that cannot be “taken”: (a) Morro Bay kangaroo rat (*Dipodomys heermanni morroensis*); (b) bighorn sheep (*Ovis canadensis*), except Nelson bighorn sheep (subspecies *Ovis canadensis nelsoni*); (d) Guadalupe fur seal (*Arctocephalus townsendi*); (e) ring-tailed cat (genus *Bassariscus*); (f) Pacific right whale (*Eubalaena sieboldi*); (g) salt-marsh harvest mouse (*Reithrodontomys raviventris*); (h) southern sea otter (*Enhydra lutris nereis*); and (i) wolverine (*Gulo gulo*).

Fish and Game Code Section 5050 protects from “take” the following “fully protected reptiles and amphibians”: (a) blunt-nosed leopard lizard (*Crotaphytus wislizenii silus*); (b) San Francisco garter snake (*Thamnophis sirtalis tetrataenia*); (c) Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*); (d) limestone salamander (*Hydromantes brunus*); and (e) black toad (*Bufo boreas exsul*).

Fish and Game Code Section 5515 also identifies certain “fully protected fish” that cannot lawfully be “taken” even with an incidental take permit. The following species are protected in this fashion: (a) Colorado River squawfish (*Ptychocheilus lucius*); (b) thicktail chub (*Gila crassicauda*); (c) Mohave chub (*Gila mohavensis*); (d) Lost River sucker (*Catostomus luxatus*); (e) Modoc sucker (*Catostomus microps*); (f) shortnose sucker (*Chasmistes brevirostris*); (g) humpback sucker (*Xyrauchen texanus*); (h) Owens River pupfish (*Cyprinodon radiosus*); (i) unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*); and (j) rough sculpin (*Cottus asperimus*).

Wildlife Corridors

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Corridors are present in a variety

of habitats and link undisturbed areas that would otherwise be fragmented. Maintaining the continuity of established wildlife corridors is important to a) sustain species with specific foraging requirements, b) preserve a species' distribution potential, and c) retain diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource.

Protection of Birds and Their Nests

Eggs and nests of all birds are protected under Section 3503, nesting birds (including raptors and passerines) under Sections 3503.5 and 3513, and birds of prey under Section 3503.5. Migratory nongame birds are protected under Section 3800, and other specified birds under Section 3505. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., hawks, owls, eagles, and falcons), including their nests or eggs.

Native Plant Protection Act

The Native Plant Protection Act (NPAA) was enacted in 1977 to protect rare and endangered plants. The Act directs the Department of Fish and Game (DFG) to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The NPAA gave the California Fish and Game Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants.

Stream and Lake Protection

The Department of Fish and Game (DFG) has jurisdictional authority over streams and lakes and the wetland resources associated with these aquatic systems under California Fish and Game Code Sections 1600 et seq. DFG has the authority to regulate work that will "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake."

DFG enters into a streambed or lakebed alteration agreement with the project proponent and can impose conditions in the agreement to minimize and mitigate impacts to fish and wildlife resources. A lake or streambed alteration agreement is not a permit, but rather a mutual agreement between DFG and the project proponent. Because DFG includes under its jurisdiction streamside habitats that may not qualify as wetlands under the federal Clean Water Act definition, DFG jurisdiction may be broader than Corps jurisdiction.

A project proponent must submit a notification of streambed alteration to DFG before construction. The notification requires an application fee for streambed alteration agreements, with a specific fee schedule to be determined by DFG. DFG can enter into programmatic

agreements that cover recurring operation and maintenance activities and regional plans. These agreements are sometimes referred to as Master Streambed Alteration Agreements (MSAAs).

Oak Woodland Conservation Act of 2001

The Oak Woodlands Conservation Act of 2001 recognizes the importance of California's oak woodlands and the critical role private landowners have in the conservation of oaks. The Act identifies the Wildlife Conservation Board (WCB) as the responsible entity to implement the Oak Woodlands Conservation Program. The Act created the Oak Woodlands Program with the expressed intent to accomplish the following:

- Support and encourage voluntary, long-term private stewardship and conservation of California oak woodlands by offering landowners financial incentives to protect and promote biologically functional oak woodlands;
- Provide incentives to protect and encourage farming and ranching operations that are operated in a manner that protect and encourage farming and ranching operation that are operated in a manner that protect and promote healthy oak woodlands;
- Provide incentives for the protection of oak trees providing superior wildlife values on private land, and;
- Encourage planning that is consistent with oak woodlands preservation.

In 2005, Senate Bill (SB) 1334 was passed by the California Legislature, mandating that counties require feasible and proportional habitat mitigation for impacts on oak woodlands as part of the CEQA process. Under Public Resources Code (PRC) Section 21083.4, a county is required to determine whether projects “may result in a conversion of oak woodlands that will have a significant effect on the environment.” The law applies to all oak woodlands except those dominated by black oak. When it is determined that a project may have a significant effect on oak woodlands, mitigation is required. PRC Section 21083.4 institutes a cap on planting oaks for habitat mitigation (cannot fulfill more than 50 per cent of the required mitigation) and prescribes four mitigation options:

- 1) conserving oak woodland through the use of conservation easements,
- 2) contributing funds to the Oak Woodlands Conservation Fund to purchase oak woodlands conservation easements,
- 3) replanting trees, or
- 4) implementing other mitigation actions as outlined or developed by the county.

Regional Habitat Conservation Planning Efforts

Regional scale conservation planning efforts are occurring through the development of habitat conservation plans (HCPs) and natural community conservation plans (NCCPs). Section 10(a)

of the Endangered Species Act authorizes HCPs and allows issuance of incidental-take permits upon approval of a conservation plan developed by the permit applicants. In 1991, the State of California passed the Natural Community Conservation Planning Act, which established the natural community planning program. NCCPs are carried out under state law and can be even broader than HCPs.

General Plan Guidelines (2003)

To assist local governments in meeting the state requirement to prepare and implement a comprehensive, long-term general plan, the Governor's Office of Planning and Research is required to adopt and periodically revise guidelines for the preparation and content of local general plans (Government Code 65040.2). The 2003 edition of *General Plan Guidelines* provides requirements for the elements in the General Plan.

The San Luis Obispo Conservation Element includes conservation element and open space element requirements, as defined by the Guidelines. The following requirements apply to biological resources in the Conservation Element:

- Managed production of forest resources
- Managed production of fisheries resources
- Water and its hydraulic force
- Rivers and other waters
- Harbors oriented towards public access and transportation or goods and services

LOCAL POLICIES

The County uses a combination of the General Plan, Land Use Ordinances, and CEQA Guidelines, where applicable, to avoid or minimize impacts of development and urbanization to sensitive biological resources. In many cases, the County incorporates state and federal approaches to protect sensitive resource areas.

The County's Inland and Coastal Land Use Ordinances applies Sensitive Resource Areas (SRA) combining designation is applied to areas of the county with special environmental qualities, or areas containing unique or endangered vegetation or habitat resources. The purpose of these combining designation standards is to require that proposed uses be designed with consideration of the identified sensitive resources, and the need for their protection. Development is permitted in SRAs provided that is found not to create significant adverse effects on the natural features of the site or vicinity that were the basis for the SRA designation, and will preserve and protect such features through the site design.

Voluntary Oak Woodland Management Plan

San Luis Obispo County is home to a wide variety of oak woodland habitats. These habitats provide numerous economic and environmental benefits on both a local and regional level. Historically oak woodlands have provided a foundation for livestock grazing, habitat for a variety of plants and animals, helped purify the water we drink, and filter the air we breathe. During the last century local oak woodlands have been most substantially affected by:

- Tree removal for urban development, agriculture, charcoal and firewood
- Introduction of nonnative, competitive plants
- Excessive livestock grazing, and
- Conversion from grazing to more intensive uses such as crop production and urban development.
- As the local population increases and the long-term economic feasibility of livestock production remains in question, pressures on local oak woodlands will continue. The challenge for San Luis Obispo County is twofold:
- To conserve our existing oak woodlands, and to enhance those woodlands that may have been impacted in the past.

The Voluntary Oak Woodland Management Plan is designed to encourage the long-term conservation of oak woodlands and recognizes that farming, ranching, and grazing operations can be compatible with oak woodland conservation.

References

- Beier, P. and S. Loe. 1992. A checklist for evaluating impacts to wildlife movement corridors. *Wildlife Society Bulletin* 20:434-440.
- San Luis Obispo County Department of Planning and Building. 1974. Environment Plan.
- San Luis Obispo County Department of Planning and Building. 1998. Agriculture and Open Space Element of the General Plan. San Luis Obispo, CA.
- San Luis Obispo County Department of Planning and Building. 2003. Estero Area Plan Final Environmental Impact Report. San Luis Obispo, CA.
- San Luis Obispo County Department of Planning and Building. 2007. Affordable Housing Ordinances Final Environmental Impact Report. San Luis Obispo, CA.

State of California Resources Agency Department of Fish and Game. 2008a. California Aquatic Invasive Species Management Plan. Sacramento, CA.

State of California Resources Agency Department of Fish and Game Biogeographic Data Branch. 2008b. California Natural Diversity Database Special Animals. <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPAnimals.pdf>

State of California Resources Agency California Department of Fish and Game, Natural Diversity Database. 2008c. Special Vascular Plants, Bryophytes, and Lichens List. Quarterly publication. 70 pp. <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPPlants.pdf>